UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,373	01/07/2002	Kouhei Suzuki	50195-288	5534

7590 02/17/2004

McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER	
DOLE, TIMOTHY J	
ART UNIT	**PAPER NUMBER**
2858	

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/036,373	Applicant(s) SUZUKI, KOUHEI
	Examiner Timothy J. Dole	Art Unit 2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities: Claim 8 recites the limitation "the coupling capacitor" on lines 5 and 6-7, for which there is no antecedent basis. It should be noted that while a coupling capacitor is claimed in claim 1, claim 8 does not depend on claim 1. Limitations recited in claim 1 cannot provide antecedent basis for limitations recited in claims, which do not depend on claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Tamesue et al.

Referring to claims 1, 6 and 8, Tamesue et al. discloses a ground detection apparatus for electric vehicle having a DC power supply circuit (fig. 1 (3a)) which is electrically insulated from a body of vehicle, comprising: a coupling capacitor (fig. 1 (Cd)) which is connected to the DC power supply circuit; a detection signal generator (fig. 1 (1)) outputting a ground detection signal comprising a periodical waveform

(column 6, line 5), the detection signal generator being connected to one terminal of the coupling capacitor through a detection resistor (fig. 1); a signal detector (fig. 1 (v_{in})) detecting a voltage amplitude of the terminal of the coupling capacitor (column 12, lines 26-28); a converter (fig. 1 (6a)) converting the detected voltage amplitude into an insulation resistance on the basis of the relationship (column 12, lines 38-41 and 48-51) between a preset voltage amplitude and a preset insulation resistance; and a level detector (fig. 1 (6b)) detecting levels of insulation resistance deterioration of the DC power supply circuit by comparing the converted insulation resistance with a preset ground decision threshold value (column 12, lines 43-45). It should be noted that the wire connecting the signal generator to the coupling capacitor will cause some resistance and is therefore considered to be equivalent to a detection resistor.

Referring to claim 2, Tamesue et al. discloses the apparatus as claimed wherein the signal detector performs sampling of the voltage amplitude at a predetermined period (column 9, lines 48-53).

Referring to claims 3 and 7, Tamesue et al. discloses the apparatus as claimed wherein the signal detector performs sampling of the voltage at a sampling period, which is a half the period of the periodical waveform to detect the voltage (column 9, lines 48-53); and a calculator (fig. 26 (4g)) calculates a difference between a first voltage detected by the odd-numbered sampling at the sampling period and a second voltage detected by the even-numbered sampling to acquire the voltage amplitude (fig. 26 (|Vx|)). It should be noted that the timing means triggers the sample/hold means when the AC current

signal crosses zero, which occurs twice per period, therefore sampling is performed every half period.

Referring to claim 4, Tamesue et al. discloses the apparatus as claimed wherein the first voltage and the second voltage are converted into insulation resistances (column 12, lines 38-41 and 48-51), respectively, and the difference between the converted resistances is compared with a preset abnormality decision threshold value to detect abnormality of the periodical waveform (column 12, lines 43-45). It should be noted that according to MPEP § 2144.04 IV C, changes in sequence of adding materials does not render the claim patentable over the prior art unless a new or unexpected result exists. Since Tamesue et al. and claim 4 both provide the same indication there is no new or unexpected result, the only difference is the order in which the indication is found. Therefore, claim 4 is not patently distinguishable over the prior art.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamesue et al. in view of Gaughan et al.

Tamesue et al. discloses the apparatus as claimed except wherein the periodical waveform is a square waveform.

Gaughan discloses a ground fault detector wherein the periodical waveform is a square waveform (abstract).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the square waveform of Gaughan et al. into the apparatus of Tamesue et al. for the purpose of more easily measuring voltage amplitudes.

Response to Arguments

4. Applicant's arguments filed November 20, 2003 have been fully considered but they are not persuasive.

5. In response to Applicant's argument with respect to claims 1, 6 and 8, that Tamesue et al. "fails to disclose a converter converting the detected voltage amplitude into an insulated resistance on the basis of the relationship between a preset voltage and a preset insulation" (page 9, lines 7-9), it should be noted that as stated in the first office action, component 6a converts the detected voltage into an insulation resistance. It should be noted that the current of Tamesue et al. is considered to be the claimed " relationship" between a preset voltage and a preset insulation resistance. According to Ohm's Law, V = I*R, shows this relationship where V is the voltage, I is the current and R is the resistance. Therefore, Tamesue et al. discloses the claimed invention since the converter (6a) converts the detected voltage (Vin) into an insulated resistance (Gleak) on the basis of the relationship (I = V/R) between a preset voltage and a preset insulation resistance.

6. In response to Applicant's argument that "The Examiner has not provided any indication as to how Tamesue can calculate the insulation resistance based on a detection resistor" (page 9,

lines 13-14), it is noted that this feature is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims merely recite converting the detected voltage amplitude into an insulation resistance on the basis of the relationship between a preset voltage amplitude and a preset insulation resistance. Nowhere is it cited that the insulation resistance is calculated based on the detection resistor.

7. In response to Applicant's argument that "a detection resistor...is not shown in Fig. 1" (page 9, lines 18-19), it should be noted that while the drawing is merely a schematic, the capacitor is nonetheless attached to the signal generator by some means. However it is connected, there will exist some resistance, no matter how small, at the connection point, which if desired, could be represented by a conventional electrical symbol for resistance.

8. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, motivation is found in the first office action, where it is stated that using a square waveform makes measuring voltage amplitudes easier. Since a square wave has only two voltage levels, measuring the detected voltage level will be easier since sampling of the detected

waveform can be performed when the square wave is a constant, whereby reducing errors due to readings at transient portions of the square wave.

Final Rejection

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Dole whose telephone number is (571) 272-2229. The examiner can normally be reached on Mon. thru Fri. from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571) 272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJD

N. Le
Supervisory Patent Examiner
Technology Center 2800